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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,064	10/21/2004	Jin Kinoshita	1003510-000163	8575

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EXAMINER
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PENG, KUO LIANG

ART UNIT	PAPER NUMBER
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1712

MAIL DATE	DELIVERY MODE
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05/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/512,064	Applicant(s) KINOSHITA ET AL.	
	Examiner Kuo-Liang Peng	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 2/21/07 Amendment.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 10-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The Applicants' amendment filed February 21, 2007 is acknowledged. Claims 1-9 are deleted. Claims 10-14 are amended. Claim 15 is added. Now, Claims 10-15 are pending.
2. Claim rejection(s) under 35 USC 112 in the previous Office Action (Paper No. 081906) is/are removed.
3. In view of Applicants' amendment/declaration, claim rejection(s) under 35 USC 102 in paragraph 6 of the previous Office Action (Paper No. 081906) is/are removed.

JP981 (JP 2000-143981) discloses an adhesive resin comprising a polyimide obtained by reacting a polysiloxane diamine represented by formula (3) and a polyphenylene oxide diamine of formula (2)' where n can be 3 and the amino groups are on the meta positions with a tetracarboxylic dianhydrides; an epoxy resin and a curing agent. ([0008]-[0013], [0023]-[0026] and [0041]-[0044]) The resin can be used in the field of electronics. ([0048]-[0049]) However, as Applicants point out that JP981 does not teach or fairly suggest the use of

polyphenylene oxide diamine having **five** phenylene groups, and **all** of the ether linkages between the phenylene groups are on **meta** positions. Especially, there is **no motivation** to particularly choose a polyphenylene oxide diamine having **all** of the ether linkages on **meta** positions. Furthermore, Applicants show that the Tgs of the polyimides derived from polyphenylene oxide diamines having the ether linkages in different positions are not the same. See polyimides [P1]-[P3] in Fig. 3 shown in the declaration.

4. In view of Applicants' amendment/declaration, claim rejection(s) under 35 USC 103 in paragraphs 8 and 10 of the previous Office Action (Paper No. 081906) is/are removed.

JP656 (JP 08-127656) discloses an adhesive resin comprising a polyimide obtained by reacting a polyphenylene oxide diamine represented by formula (1) and a polysiloxane diamine represented by formula (2) with a tetracarboxylic dianhydrides. ([0004]-[0008]) The resin can be used in the field of electronics. ([0002]) However, JP656 does not teach or fairly suggest the use of polyphenylene oxide diamine having **five** phenylene groups, and **all** of the ether linkages between the phenylene groups are on **meta** positions. Especially, there is **no motivation** to particularly choose a polyphenylene oxide diamine having **all** of the ether linkages

on **meta** positions. Furthermore, Applicants show that the Tgs of the polyimides derived from polyphenylene oxide diamines having the ether linkages in different positions are not the same. See polyimides [P1]-[P3] in Fig. 3 shown in the declaration.

5. The text of those sections of Title 35, U.S. code not included in this action can be found in prior Office Action(s).

***Claim Rejections - 35 USC § 103***

6. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP213 (JP 08-134213).

JP213 discloses an adhesive resin comprising a polyimide obtained by reacting a polyphenylene oxide diamine represented by formula (1) and a polysiloxane diamine represented by formula (2) with a tetracarboxylic dianhydrides. ([0005]-[0016]) The resin can be used in the field of electronics. ([0002]) JP213 is silent on the use of a polyphenylene oxide diamine set forth in the instant claims. However, JP213's polyphenylene oxide diamine is a homolog of that of Applicants'. A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities.

"An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) See MPEP 2144.09.

For Applicants' argument (Remarks, page 8, 3<sup>rd</sup> paragraph), Examiner disagrees. Regarding the number of ring structures, as mentioned above, a *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. Regarding the meta-position defined by formula (4), JP213 does disclose 3,3'-bis(3-aminophenoxy)diphenylether where **all** the ether linkages are on **meta** positions. ([0009]) Applicants' declaration appears not to provide sufficient evidence to overcome the *prima facie* case of obviousness.

7. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP656 as applied to Claims 12-15 above, and further in view of Yoshida (US 5 773 509).

The difference between JP656 and the present invention is the requirement of a thermosetting resin of epoxy resin.

Yoshida teaches the use of an epoxy resin and a curing agent in a heat resistant resin composition comprising a polyimide. The motivation of using the epoxy resin and the curing agent is to afford a film adhesive which has excellent heat resistance and which can adhere at a low temperature in a short time. (col. 2, line 40 to col. 4, line 29) In light of the benefit mentioned, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Yoshida's epoxy resin and curing agent into JP656's composition. Especially, Yoshida is in the same field as that of JP656's endeavor.

For Applicants' argument (Remarks, page 9, last paragraph to page 10, 1<sup>st</sup> paragraph), Applicants are reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

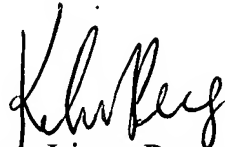
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained

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from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp  
May 8, 2007

  
Kuo-Liang Peng  
Primary Examiner  
Art Unit 1712